

# NAVAL POSTGRADUATE SCHOOL MONTEREY, CALIFORNIA



## THESIS

**STUDY OF FIRST-TERM ATTRITION AMONG  
RACIAL/ETHNIC MINORITIES IN THE NAVY**

by

Emilson M. Espiritu

March 1997

Principal Advisor:

Mark J. Eitelberg

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MINORITIES IN THE NAVY**

Emilson M. Espiritu  
Lieutenant, United States Navy  
B.S., Old Dominion University, 1989

Submitted in partial fulfillment  
of the requirements for the degree of

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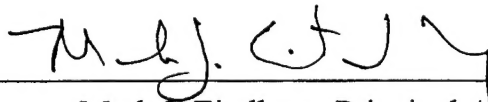
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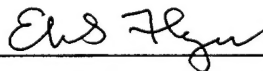


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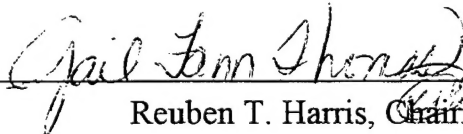
Approved by:



Mark J. Eitelberg, Principal Advisor



Eli S. Flyer, Associate Advisor



Reuben T. Harris, Chairman  
Department of Systems Management



## **ABSTRACT**

The objective of this study is to gain a better understanding of first-term enlisted attrition among racial/ethnic groups in the Navy. Previous research on attrition is limited with respect to racial or ethnic variables. The study uses a special data base developed by the Defense Manpower Data Center in Monterey, CA. The data base contains the records of over 500,000 male recruits who enlisted in the Navy during fiscal years 1983 through 1992. These people are tracked over a 48-month period to determine rates of first-term attrition. Cross-tabulation and frequency analysis are used to examine attrition rates by race, racial/ethnic group, and ethnicity (including 20 categories). Attrition rates for these groups are also evaluated according to several variables: Armed Forces Qualification Test category; high quality status (a combination of education and aptitude test scores); reasons for separation; and occupational area. The exploratory results reveal several trends between and within racial and ethnic groups, based on the selected variables. The results also confirm that a number of racial or ethnic groups have comparatively low rates of attrition. Further research is recommended to more fully explain underlying reasons for the relatively lower rates of attrition experienced by certain minorities.



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## I. INTRODUCTION

### A. BACKGROUND

The first-term attrition of military personnel has been studied by numerous manpower analysts for over 40 years. For the most part, the attrition rates of enlisted members have remained remarkably constant. Specifically, "for the last decade, about one-third of enlistees have failed to complete their first tour of duty."<sup>1</sup> Many researchers attribute this consistency to changes in the military environment and society as well as to policies dealing with early separations. In the 1980s, Buddin focused on the first-term loss rates of military personnel and found that:

All the military services currently lose approximately thirty percent of each entering cohort before the completion of three years of service. The largest loss rate occurs during the first six months, when over ten percent of the entering cohort is discharged.<sup>2</sup>

Basically, this means, if 200,000 recruits enter the military in any given year, one could expect approximately 60,000 of them to be discharged before finishing their initial term of enlistment. Furthermore, historical data show that the largest loss of personnel occurs within the first six months of service.

Attrition is defined as the failure of a military member to complete his or her term of

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<sup>1</sup> GAO Report to Congress, Military Attrition: DoD Could Save Millions by Better Screening Enlisted Personnel NSIAD-97-39 (Washington, D.C.: General Accounting Office, 1997).

<sup>2</sup> Richard Buddin, Analysis of Early Military Attrition Behavior, R-3069-MIL (Santa Monica, CA: Rand Corporation, 1984).

enlistment due to misconduct, inaptitude, family desertion, physical or psychological disqualification, or various other reasons. Most studies of personnel attrition focus on the first term of service for enlistees; and, since terms of service may vary both across and within military branches, studies of attrition typically look only at periods of service up to three or four years.

Since the enactment of the Gramm-Rudman-Hollings Act,<sup>3</sup> the defense budget has been a major target for reduced spending. Defense budget cuts, coupled with the high cost of attrition, have compelled the military to maximize its return of investment from each enlistee. A recent GAO report states that “the separation of enlisted personnel before they complete their initial training is wasteful because the services lose their investment and must increase accessions to replace these losses. . . . Consequently, first-term attrition is an issue of significant concern at all levels within the armed forces.”<sup>4</sup>

The Navy is greatly concerned with attrition, because of the substantial costs associated with recruiting, training, and retaining individuals. As Eitelberg writes, the pressure on the military to save money has intensified greatly during the past decade:

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<sup>3</sup> The Gramm-Rudman-Hollings Act requires Congress to reduce the federal budget and control federal spending.

<sup>4</sup> GAO Report to Congress, 1997.

The military is widely viewed as having received preferential treatment during the first half of the 1980s when the annual defense budget mushroomed from \$144 billion to \$295 billion. This may help to explain why, with the collapse of Soviet communism, the American people favor defense budget cuts to pare down the federal deficit, and why there is concurrent expectation that the defense drawdown should yield a healthy peace dividend. As nation's leaders attempt to find savings in the post-Cold War budget, many defense programs will become increasingly difficult to justify; and military members, along with other federal workers, will be called upon to make financial sacrifices for the common good. In all areas of government spending, there will be a growing insistence from the public for accountability and demonstrated value for the dollar.<sup>5</sup>

Simply put, as the defense budget becomes smaller, the armed forces must strive even harder to find new approaches to reduce wastage. If the Navy could reduce attrition by 4 percent, it would save approximately \$1.6 million annually. If the Navy could achieve a 10 percent reduction in attrition, it would save as much as \$4.0 million.<sup>6</sup>

## **B. PURPOSE**

The primary purpose of this study is to identify and analyze the attrition rates of racial/ethnic minorities who enlisted in the Navy during a ten-year period from fiscal year 1983 through 1992. Second, this study looks at the relationship of attrition rates with selected demographic or background variables of persons in racial/ethnic groups. This information can provide a better understanding of factors associated with race or ethnicity that improve or detract from a service member's likelihood of completing a full, first-term of enlistment in the Navy.

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<sup>5</sup> Mark J. Eitelberg and Stephen L. Mehay, "Looking Ahead: The Shape of Things to Come" in Marching Toward the 21<sup>st</sup> Century, ed. Mark J. Eitelberg and Stephen L. Mehay (Westport, CT: Greenwood Press, 1994), 154, 230.

<sup>6</sup> GAO Report, 24.

### C. BENEFITS OF THE STUDY

Because there is a growing number of individuals with diverse backgrounds who will enter the military, it is important to understand their motivation to enlist and remain on active duty or leave the service early, so manpower analysts can improve policy and procedures. Studying racial/ethnic minorities in the Navy will help the organization prepare for the future, as the nation's minority population continues to expand.

As Zucca observes, "the primary goal of future efforts [of studying minorities in the military] will be to improve the conditions of people in the organizations. . . ." <sup>7</sup> Specifically, studies regarding racial/ethnic minorities and first-term attrition will contribute to the overall improvement of the organization as well as its members. Moskos suggests researchers strive to build theory from the combination of recruitment, assignment, performance, attitudes toward service life, inter-group relations, and the relationship between the armed forces and society.<sup>8</sup> In this way, one can obtain a complete view of an important segment of the force, as the military becomes increasingly more "diverse."

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<sup>7</sup> Gary J. Zucca, Ethnic Distribution Among U.S. Navy Occupation Specialties and Ranks: Organizational Implications, PhD Dissertation, University of Florida, 1984.

<sup>8</sup> Warren L. Young, Minorities and the Military (Westport, CT: Greenwood Press, 1982), 19.



#### **D. ORGANIZATION OF THE THESIS**

Chapter II presents background information and a review of previous studies related to the first-term attrition of racial/ethnic minorities in the armed forces. Chapter III discusses the research methodology used in the study. A brief description of terms is also included here. Then, Chapter IV presents the results of the data analysis, which is primarily exploratory and descriptive. Finally, Chapter V offers conclusions and recommendations based on the study.



## II. LITERATURE REVIEW

This chapter presents a brief history of racial/ethnic minorities and their service in the military. Despite past exclusions and resistance to the participation of most minorities in the military, this segment of the military's population has been expanding. Indeed, as of 1995, racial/ethnic minorities accounted for about one-third of the military's enlisted force. This compares with a proportion of less than 30 percent of the military in the 1980s and approximately 26 percent of the national population between the ages of 18 and 44 years.

This chapter looks at demographic trends in the U.S. workforce and the military, and explores the reasons why racial/ethnic minorities are drawn to service in the armed forces.

The chapter also reviews past studies on attrition. This provides the reader with some background information on the topic of attrition and the ways in which it has been studied since the inception of the All-Volunteer Force (AVF).

### A. RACIAL/ETHNIC PARTICIPATION IN THE MILITARY

The history of racial/ethnic minorities and the military is rich with examples of dedicated service, dating back to the origins of the earliest colonies. For example, as early as 1619, blacks were employed by the colonies to help defend against Indian attacks. In fact, blacks participated in all of the "colonial wars" in North America between 1689 and 1763.<sup>9</sup> They also participated in the Civil War and the Spanish-American War.<sup>10</sup> In addition, blacks

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<sup>9</sup> Young, Minorities and the Military, 191.

<sup>10</sup> Ibid.

participated in the military throughout all major wars of the twentieth century.<sup>11</sup>

Hispanic-Americans have a similarly rich history of service to the nation in the armed forces. The recorded participation of Hispanics dates back as far as the American Revolutionary War.<sup>12</sup> As Garcia-Cabrera states on the history of Hispanics in the U.S. Military:

Hispanic participation in World Wars I and II and the Korean and Vietnam Conflicts has been a perennial testimony of their undivided loyalty to the United States flag. Following the unique Hispanic tradition of love of country, of which we have spoken, a great number of them proudly responded to the call for arms beginning in 1917 with World War I up to the last United States involvement abroad, the Vietnam Conflict.<sup>13</sup>

Because of changes in U.S. immigration laws, opportunities have expanded for persons from many other racial or ethnic groups to serve in the military. As Greenwood notes, "changes in the U.S. immigration law passed in 1965, opened the door to persons of Asian ancestry as well as to other nationality groups. . . ."<sup>14</sup> Indeed, historically, service in the military has been viewed as a way in which immigrants could achieve full citizenship status. Military service was a test of loyalty and demonstration of personal sacrifice in support of one's new country.

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<sup>11</sup> Ibid., 202-222.

<sup>12</sup> Angelita Garcia-Cabrera, The Hispanic Veteran of the Armed Services and in the Veterans Administration, PhD Dissertation (Brandeis University, 1978).

<sup>13</sup> Ibid., 26.

<sup>14</sup> Michael J. Greenwood, "Immigrants and the U.S. Military" in Marching Toward the 21<sup>st</sup> Century, ed. Mark J. Eitelberg and Stephen L. Mehay (Westport, CT: Greenwood Press, 1994), 154, 97.

## **B. DEMOGRAPHIC CHANGE**

### **1. Trends in the U.S. Workforce**

A Department of Labor study indicates that the U.S. workforce will become considerably more diverse over the coming years.<sup>15</sup> These changes in the workforce will reflect generally increasing proportions of racial/ethnic minorities in the U.S. population, especially among younger age groups. As a growing number of immigrants enter the United States, the demographics of the population will undoubtedly change. Greenwood states that "immigration has again become an important source of U.S. population growth, accounting for perhaps as much as one-third or more of incremental U.S. population growth during the 1980s."<sup>16</sup>

According to the Hudson Institute, there are five major trends that will characterize workforce demographics as the United States enters the next century:

1. The population and the workforce will grow more slowly than at any time since the 1930s.
2. The average age of the population and the workforce will rise, and the pool of young workers entering the labor market will shrink.
3. More women will enter the workforce.
4. Minorities will be a larger share of new entrants into the labor force.
5. Immigrants will represent the largest share of the increase in the population and the workforce since the First World War.<sup>17</sup>

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<sup>15</sup> William B. Johnston, dir., Workforce 2000: Work and Workers for the Twenty-first Century (Indianapolis, IN: Hudson Institute, 1987), 89.

<sup>16</sup> Greenwood, 111.

<sup>17</sup> Johnston, Workforce 2000, 91.

## 2. Military Representation

Many researchers have suggested that, as racial/ethnic minorities become a larger part of the U.S. population, the composition of the military will likely change as well. Eitelberg states that "the American population, the size of the force, and numerous other factors can have a direct bearing on the demographic composition of the armed services." On the other hand, he suggests that "representation of racial or ethnic minorities, especially blacks, has settled at a balancing point [in the military]-- resistant to change."<sup>18</sup>

Table 1 compares the ethnic composition of active-duty military officers and enlisted personnel in 1982 and 1992.<sup>19</sup> During the eleven-year span from 1982 to 1992, the proportion of African-Americans in the military increased by approximately 1 percent. The proportion of persons of Hispanic origin grew by approximately 1.5 percent over this period. At the same time, as seen in Table 1, the proportion of all ethnic minority groups increased. This increase is expected to continue well into the twenty-first century.<sup>20</sup>

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<sup>18</sup> Mark J. Eitelberg, "The All-Volunteer Force After Twenty Years", in Professionals on the Front Line: Two Decades of the All-Volunteer Force, ed. J. Eric Fredland, Curtis Gilroy, Roger D. Little, and W.S. Sellman (Washington, DC: Brassey's, 1996), 82.

<sup>19</sup> Greenwood, 108.

<sup>20</sup> Ibid., 112.

**Table 1.** Percentage Distribution of Active-Duty Military Personnel (Officers and Enlisted Personnel), by Ethnicity, 1982 and 1992

Ethnicity	Active-Duty Military Personnel		
	1982	1992	Difference
African-American	19.2	20.1	+ 0.9
Mexican	1.7	2.2	+ 0.5
Latin American	0.1	0.2	+ 0.1
Other Hispanic Descent	0.6	1.5	+ 0.9
Filipino	1.3	1.5	+ 0.2
Other Asian Descent	0.3	0.3	no change
All Others (mostly Europeans)	76.8	74.2	-
TOTAL	100.0	100.0	- -

Source: Michael J. Greenwood, "Immigrants and the U.S. Military," in Marching Toward the 21st Century, ed. Mark J. Eitelberg and Stephen L. Mehay (Westport, CT: Greenwood Press, 1994), 111.

### C. WHY RACIAL/ETHNIC MINORITIES JOIN THE MILITARY

The military is viewed by many minorities and recent immigrants to the U.S. as steady, honorable employment, offering "generous" fringe benefits and opportunities for occupational training as well as money for college. As the Democratic Leadership Council states, "the military has become for many low-income Americans, and particularly minorities, an employer of last resort."<sup>21</sup> In addition, by joining the military, many minorities who are more recent immigrants demonstrate their sense of immediate attachment to their new country.<sup>22</sup> The idea of minorities joining the military "tends to stress the personal worth of the individual man and to ignore his social background."<sup>23</sup> Also, as Janowitz writes, "the military attracts from aspiring social groups," where "the ambitious. . . recognize that career success in the military

<sup>21</sup> Richard L. Fernandez, Social Representation in the U.S. Military (Washington, D.C.: Congressional Budget Office, 1989).

<sup>22</sup> Ibid., 1.

<sup>23</sup> Ibid.

is less likely to be affected by their humble origins than in any other professions.”<sup>24</sup> In addition, some racial/ethnic minorities may see the military as an alternative route to a better life—or a “second chance” to rise out of an otherwise disadvantaged or “dead end” existence. Binkin, for example, writes that “African-Americans facing relatively dim employment prospects in the 1970s and the 1980s joined the AVF in record numbers.”<sup>25</sup> Simply put, as General Colin Powell once observed, minorities join the military for three reasons:

They come for the education. They come in for the adventure. They come in to better themselves.<sup>26</sup>

#### **D. MINORITIES AND FIRST-TERM ATTRITION**

Numerous studies have been conducted over the years on the first-term attrition of military personnel. To date, there has been very little research specifically addressing attrition by racial/ethnic minorities. Nevertheless, previous studies suggest that certain groups of racial/ethnic minorities are much less likely than whites to be discharged before completing their first-term of enlistment. The reasons for these differences are not clear. This section examines previous studies on attrition, by decade, from the 1970s to present.

##### **1. The 1970s**

A 1981 study by Griffin reviewed trends of first-term enlisted attrition from 1965 to

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<sup>24</sup> Young, 24.

<sup>25</sup> Martin Binkin, Who Will Fight the Next War? The Changing Face of the American Military (Washington, DC: The Brookings Institution, 1993).

<sup>26</sup> Lynne Duke, “General Colin Powell Notes: Military Enlistment Remains a Matter of Choice,” Washington Post, November 28, 1990, 5.



1977.<sup>27</sup> Griffin found that women had an attrition rate of more than 50 percent within the first two years of service. The same study compared the attrition rates of whites and blacks (holding education and aptitude test scores constant). When education levels were controlled, blacks were found to have higher (but insignificant) attrition rates than whites. The most significant predictor variable of attrition was education.<sup>28</sup> A high-school graduate, as in numerous other studies, was found consistently more likely than a non-graduate to complete a first term of enlistment.

Griffin describes another study that used a linear regression model to predict first-year losses for Navy enlisted men.<sup>29</sup> In this study, individuals who scored higher on the Armed Forces Qualification Test (AFQT) had lower attrition rates than did those who scored in lower levels of the test. At the same time, minorities who entered the Navy in 1973 had a lower attrition rate than did whites. Further, sailors who had more than twelve years of education (high school graduate or above) were less likely than others to leave before completing a first-term.<sup>30</sup>

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<sup>27</sup> Patricia Griffin, First Term Attrition Severity Index For U.S. Navy Ratings, Master's Thesis (Monterey, CA: Naval Postgraduate School, 1981).

<sup>28</sup> Ibid., 22.

<sup>29</sup> Ibid., 13.

<sup>30</sup> Ibid.

## 2. The 1980s

One of the most extensive attrition studies to include minorities in the Navy was conducted by Gardner in 1980.<sup>31</sup> He investigated the relationship of initial assignment and personnel background variables<sup>32</sup> to first-term enlisted attrition in the Navy. Gardner then calculated attrition rates, and compared these rates by variables such as race, age at entry, training, and duty assignments. Gardner's findings show that the first three months of active duty accounted for about 7 percent of attrition; and, among these losses, 9 percent were black. In addition to other results, Gardner found that Filipino members had the lowest attrition rate for any racial/ethnic group.<sup>33</sup> Gardner concluded that racial/ethnic minorities in the Navy tend to have lower attrition rates than do their white counterparts.

Another study by Flyer and Elster in 1983 looked at first-term enlisted attrition based on selected entry variables, such as service, gender, race, education level, age, marital status, AFQT scores, and area of residence.<sup>34</sup> An attrition rate was calculated based on the number of personnel accessions versus personnel losses. This study was unusual because it had such a large population and covered all services (Army, Navy, Marine Corps, and Air Force). Flyer and Elster sought to find a relationship among the entry-level variables and attrition.

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<sup>31</sup> Daniel E. Gardner, The Relationship of Initial Assignment and Personnel Background Variables to First-Term Enlisted Attrition From the Navy, Master's Thesis (Monterey, CA: Naval Postgraduate School, 1980).

<sup>32</sup> Gardner defines *personnel background variables* as race and ethnic groups.

<sup>33</sup> Gardner, First Term Enlisted Attrition, 45.

<sup>34</sup> Eli S. Flyer and Richard S. Elster, First-Term Attrition Among Non-Prior Service Enlisted Personnel: Loss Probabilities Based on Selected Entry Factors (Monterey, CA: Naval Postgraduate School, 1983).

In addition to other results, the authors found that black male enlistees had a higher attrition rate than did their non-black counterparts. On the other hand, black women tended to have lower attrition rates than did their non-black counterparts.<sup>35</sup>

In 1984, Buddin conducted a general study of attrition among first-term enlisted personnel.<sup>36</sup> He described his research as follows:

This study assesses how background characteristics, prior work experience, and satisfaction with initial military job assignment influences attrition losses during the first six months of service. . . . This research compares and contrasts the determinants of early attrition with those of civilian job separations by young workers.<sup>37</sup>

Buddin determined that, "for all services, not having a high school diploma is a major determinant of early attrition."<sup>38</sup> This particular finding is, perhaps, the strongest and most consistent result of military attrition studies since it was first discovered by Flyer in the 1950s.<sup>39</sup>

A related study conducted by the RAND Corporation looked at military enlistment and attrition and "decision reversal."<sup>40</sup> This study finds that, "with respect to race, the black

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<sup>35</sup> Ibid., 67.

<sup>36</sup> Buddin, Early Attrition, 50.

<sup>37</sup> Ibid.

<sup>38</sup> Ibid.

<sup>39</sup> Eli S. Flyer, Factors Relating to Discharge for Unsuitability Among 1956 Airman Accessions to the Air Force, WADC-TN-59-201 (Lackland AFB, TX: Personnel Laboratory, Wright Air Development Center, December 1959).

<sup>40</sup> John Antel, James R. Hosek, Christine E. Peterson, Military Enlistment and Attrition: An Analysis of Decision Reversal, R-3510-FMP (Santa Monica, CA: RAND Corporation, 1987).

and Hispanic [high school] graduates are no more likely than whites to attrite, thus offering no compelling evidence that after controlling for other characteristics, these graduate groups are more likely to stay in service because of differentially lower discrimination in the military than the civilian sector.”<sup>41</sup>

Another study, conducted by Buddin in 1988, examined trends of attrition of high-quality Navy recruits.<sup>42</sup> A “high quality” recruit was defined as an individual who had a high school diploma (or higher) and who scored above the 50<sup>th</sup> percentile on the AFQT.<sup>43</sup> Buddin found that black women had “one- and two- year post-training attrition rates 1.5 and 4.8 percentage points, lower, respectively, than white women.”<sup>44</sup> This particular finding is consistent with the results of Flyer and Elster.<sup>45</sup>

In a 1989 study by the Center for Naval Analyses, Cooke and Quester examined first-term attrition in the Navy.<sup>46</sup> The purpose of the study, as Cooke and Quester write, was as follows:

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<sup>41</sup> Ibid., 35.

<sup>42</sup> Richard Buddin, Trends in Attrition of High-Quality Military Recruits, R-3539-FMP (Santa Monica, CA: RAND Corporation, 1988).

<sup>43</sup> Ibid., 1

<sup>44</sup> Ibid., 39

<sup>45</sup> Flyer and Elster, First Term Attrition, 67.

<sup>46</sup> Timothy W. Cooke and Aline O. Quester, Navy First-Term Attrition, CRM 89-17 (Alexandria, VA: Center For Naval Analyses, 1989).

The focus is on recent increases in attrition for recruits accessed since FY 1986. It presents the historical correlates of attrition and examines patterns in reasons for and authority for discharge. Also, for the first time, patterns and trends in first-term attrition within and between activities, including carriers, surface combatants, submarines, squadrons, and amphibious units, are analyzed.<sup>47</sup>

Among other findings, Cooke and Quester concluded that "first-term attrition is up." In addition, the authors reported that "there has been no change in recruit characteristics that differentiate groups with higher and lower attrition probabilities."<sup>48</sup>

### **3. The 1990s**

A 1991 study by the RAND Corporation focused on "reasons why individuals leave the service early."<sup>49</sup> The authors looked specifically at "the underlying reason for recruits leaving the military before the end of their first term of service."<sup>50</sup> Using the Department of Defense Inter-service Separation Codes (ISCs), they found three relationships between separation reasons and other factors. These factors are:

1. Certain types of mental health problems were more likely to surface early rather than later during a recruit's first-term of enlistment;
2. women were more likely than men to have such problems; and
3. men were more likely than women to separate because of use of alcohol, drugs, and both minor and major offenses.

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<sup>47</sup> Ibid., iii.

<sup>48</sup> Ibid., 25.

<sup>49</sup> Stephen Klein, Jennifer Hawes-Dawson, Thomas Martin, Why Recruits Separate Early, R-3980-FMP (Santa Monica, CA: RAND Corporation, 1991).

<sup>50</sup> Ibid., iii.

In this study, the race variable (white, black, and other) was used to analyze why recruits leave, based on their ISCs. The authors found that, there were notable differences in attrition rates between the races based on ISCs. The major reasons why recruits left the military, regardless of race, concerned work-related problems. This was followed by training problems. On the other hand, separation rates due to drug or alcohol or physical readiness tended to be less than 20 percent. The exception was for the "Other" race group, which had an attrition rate greater than 20 percent in the category of the alcohol-related problems.<sup>51</sup>

A 1995 study conducted by the Navy Personnel Research and Development Center (NPRDC) uses the Compensatory Screening Model for B Cell Enlistment<sup>52</sup> to determine the attrition rates of recruits.<sup>53</sup> The authors describe the purpose of the research as follows:

The objective of this study was to design a compensatory screening model (CSM) to assess applicants on the basis of available measures of individual attributes. The resulting model computes the probabilities of completing the first 2 years of enlistment from four application variables: number of years of education attended, education credential attained, age at application, and the Armed Forces Qualification Test (AFQT) score.<sup>54</sup>

The authors employed several variables, such as gender and ethnicity (Hispanics and African-Americans), to estimate the probability of individuals completing a 2-year enlisted term.

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<sup>51</sup> Ibid., 25.

<sup>52</sup> This screening model is used by analyst to assess a recruits probability of completing the first two years of service.

<sup>53</sup> Thomas Trent and Steven Devlin, Compensatory Screening Model for B Cell Enlistment TN-95-10 (San Diego, CA: Navy Personnel Research and Development Center, 1995).

<sup>54</sup> Ibid., iv.

## E. SUMMARY OF ATTRITION STUDIES

There is relatively little previous research that specifically addresses the attrition behavior of racial/ethnic minorities who join the military. Most attrition studies have examined entry-level factors or demographic variables such as age, education level, AFQT scores, and initial duty assignment to determine why an individual tends to leave the military before completing the first term of service.

Many researchers agree that an individual's education level somehow influences his or her likelihood to leave.<sup>55</sup> More specifically, a person with a high school diploma (HSDG) is considerably less likely to leave the service early than is his or her counterpart who has dropped out of high school. In fact, high school dropouts tend to have an attrition rate that is twice the rate of the high school graduate.<sup>56</sup>

Another characteristic linked to an individual's likelihood of leaving the military early is his or her aptitude test score at the time of enlistment. Many researchers find that, in general, the higher a recruit's AFQT score, the less likely he or she is to leave the military early. Conversely, the lower the AFQT score, the more likely the individual will fail to complete a full term of service.<sup>57</sup>

This review of literature is somewhat limited, because there is little research that specifically addresses the attrition experiences of racial/ethnic minorities in the military. Nevertheless, it is important to understand previous research on attrition, if only to gain an

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<sup>55</sup> Griffin, 1981 and Buddin, 1988.

<sup>56</sup> Buddin, Early Attrition Behavior, 47.

<sup>57</sup> Ibid., 49.

understanding of the range of factors linked with attrition over the past several decades. For, as Cooke and Quester point out, “knowledge of these patterns and trends in first-term attrition is necessary to appropriately evaluate policy options.”<sup>58</sup>

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<sup>58</sup> Cooke and Quester, First-Term Attrition, 25.



### III. DATA AND METHODOLOGY

The primary objective of this thesis is to identify and analyze attrition rates among Navy recruits by racial/ethnic group. The data for this thesis were provided (in raw form) by the Defense Manpower Data Center (DMDC) in Monterey, California. A SAS program was written to read and manipulate the data. SAS is a statistical software program that enables the user to control data access and to analyze and present data.<sup>59</sup>

A description of the data and analytic approach is presented below.

#### A. DATA

The data consisted of cohort accession files, limited in the following way: male only, non-prior service, first-term enlisted, non-reservists who entered the active-duty Navy during fiscal years 1983 through 1992. The cohort accession file contains the records of over 500,000 male enlisted personnel who entered the Navy during the ten-year period. These records include entry-level information on individuals as well as information on why they left, current as of September 1996 (end of fiscal year 1996).

Women were excluded from the data files to limit the scope of the analysis. A relatively small number of female racial/ethnic minorities entered the Navy during the 1983 to 1992 period; and, since previous studies have shown that there are important differences in the attrition behavior of male and female service members (e.g., medical and pregnancy-related separations), a decision was made to restrict the study to male minorities only.

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<sup>59</sup> Sandra D. Schlozhauer and Ramon C. Littell, SAS System for Elementary Statistical Analysis (Cary, NC: SAS Institute Inc., 1995).

The primary reasons for using a ten-year collection of recruits was to ensure that the number of personnel in each racial/ethnic group would allow for the required data analysis. Navy personnel in the data base were examined according to three race or ethnicity categories, as well as much more detailed divisions of the population based on ethnic origin, including 20 separate categories (discussed below). A large number of personnel had to be included in the total data base so that each of the 20 categories of ethnic origin would contain a sufficient number of recruits for cross tabulation with other variables.

### **1. Racial/Ethnic Group**

The terms, minority, ethnic groups, and race are discussed below with respect to their use in this and other studies.

#### ***a. Minority***

A "minority" is defined as a group of people, distinguishable from others by race, nationality, religion, or language, who think of themselves as a differentiated group.<sup>60</sup> For example, in the United States, "whites" are generally accepted as the majority group. Blacks, Hispanics and Asians are considered minority groups within the U.S. population. Europeans in Asia would be known as the minority group.

Sociological definitions of "minority groups" usually take into account that the group suffers some disadvantage due to prejudice or discrimination. For example, women are sometimes called a "minority group"--though they are neither a group nor a minority, but have been historically discriminated against within a male-oriented society. Conversely,

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<sup>60</sup> Young, 294.

groups that are privileged within their society--but constitute a numerical minority--are rarely called a "minority group" (such as whites in South Africa). In this sense, then, the definitions of "minority" have come to signify forms of treatment toward an identifiable segment of the population more than the numerical size of a group. In the present study, the term "minorities" is used generally to signify members of racial or ethnic groups other than "whites" or "whites, of European origin."

*b. Ethnic Groups*

There are some differences according to Hutnik between minority groups and ethnic groups.<sup>61</sup> Ethnic groups are not necessarily ranked in the socioeconomic structure. Spinner states ethnicity is often used as a general "catch-all" phrase when trying to define or explain racial groups, ethnic groups, or national groups. In addition, definitions of ethnic groups proposed by various authors "do not specify their relative ranking in society."<sup>62</sup> The major difference between a minority group and an ethnic group involves the way in which society ranks or treats the group. Thus, "ethnics" have no specific ranking in society, whereas minority groups do.<sup>63</sup> In American society, however, a group may be seen as both an ethnic group and a minority group, depending on the context. For example, Hispanics and Filipinos are often described as "ethnic groups" because of their origins from immigration to the United States. Nevertheless, both of these groups are also seen as minority groups, based upon their

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<sup>61</sup> Nimmi Hutnik, Ethnic Minority Identity (Oxford, England: Claredon Press, 1991).

<sup>62</sup> Jeff Spinner, The Boundaries of Citizenship: Race, Ethnicity, and Nationality in the Liberal State (Baltimore, MD: John Hopkins University Press, 1996).

<sup>63</sup> Hutnik, 17.

status and treatment within the nation's "white-dominated" society of persons with European origins. As Hutnik writes, ethnic groups are a designated population that "shares fundamental cultural values realized in overt unit in cultural forms"; "makes up a field of communication and interaction"; is "biologically self-perpetuating"; and has a "membership which identifies itself and is identified by others as constituting a category distinguishable from other categories of the same orders."<sup>64</sup>

The U.S. Department of Defense maintains information on the ethnicity of members of the armed forces. This information is self-reported by service members, which has a bearing on its technical or scientific accuracy. Still, the ethnic group chosen by a recruit as the one to which he or she "belongs" is important as an indicator of how the recruit describes himself or herself (although the ethnic group may represent the background of only one parent in a mixed-ethnic marriage). A total of 20 ethnic groups are currently shown in the Department of Defense personnel files. These groups are as follows:

1. Mexican;
2. Puerto Rican;
3. Cuban;
4. Latin American;
5. Other Hispanic Descent;
6. Aleutian;
7. Eskimo;
8. North American Indian;
9. Chinese;
10. Japanese;
11. Korean;
12. Indian;
13. Filipino;
14. Vietnamese;

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<sup>64</sup> Ibid., 18.

15. Other Asian Descent;
16. Melanesian;
17. Micronesian;
18. Polynesian;
19. Other Pacific Islander Descent; and
20. Others/none.

*c. Race*

Race is an anthropological classification used to divide a population into several divisions. Skin color is widely employed as a criterion of race. The awareness and importance of racial distributions varies from one society to the next. The U.S. Department of Defense generally identifies personnel in official reports on the basis of the following racial categories: white, black, and other. Often, researchers in Department of Defense studies will combine race with ethnicity to show demographic distributions of military personnel by "racial/ethnic group." Subcategories of racial/ethnic group are usually as follows: white, black, Hispanic, and other (including Asian/Pacific Islander, American Indian, and Alaskan Native). It should be noted here that, although black and Hispanic are treated as separate categories, some "Hispanics" may be "black" (and vice versa). Indeed, since self-identification is the basis of determining one's racial/ethnic group, Hispanics may actually be of any race.

**B. METHODOLOGY**

The primary unit of measurement to study attrition behavior in a group is the attrition rate. Attrition rates are calculated by taking the total number of individuals (in each racial and or ethnic group) who entered the service, and then dividing that number by the total number who left prior to completing their first term of enlistment.

Along with these attrition rates, cross-tabulations were used to explore relationships

between attrition behavior and selected variables in the data file.

### **C. VARIABLES**

The following variables were used as a focal point of the study: Inter-service Separation Code (ISC), Defense Primary Occupation Code (DPOC), and High Quality (HQ). The ISC indicates the official reason why an individual left the service prior to completing a first-term of enlistment. DPOC is the primary occupation of the individual. For ease of analyzing DPOC, enlisted occupations were coded into ten major categories. The occupational categories were determined using the 1993 Department of Defense Occupational Conversion Index.<sup>65</sup>

HQ is defined as a high-quality recruit. A high quality recruit is an individual who receives a score at or above the 50<sup>th</sup> percentile (population average) on the AFQT and also has a high school diploma or higher level of education.

### **D. ATTRITION**

Attrition occurring during the first four years of service was analyzed in this study. Any separation or discharge from the Navy was considered attrition, and separated by race, ethnic group, and racial/ethnic group for comparison. Attrition for this study is based on the following:

1. Medical--if the individual had to leave because of a previous condition, disability, unqualified for active duty, or failure to meet weight/body fat standards;

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<sup>65</sup> Office of the Assistant Secretary of Defense, Occupational Conversion Index: Enlisted/Officer/Civilian, DoD 1312.1-1 (Washington, D.C.: Government Printing Office, 1993).

2. Dependency or hardship;
3. Failure to meet minimum behavioral or performance criteria--which includes character or behavior disorder, motivational problems, enuresis, inaptitude, alcoholism, shirking, discreditable incidents, drugs, financial irresponsibility, lack of dependent support, unsanitary habits, civil court conviction, security, court martial, fraudulent entry, desertion, homosexuality, sexual perversion, good of the service, juvenile offender, misconduct, unfitness, pattern of minor disciplinary infractions, commission of a serious offense, failure to meet minimum qualifications for retention, expeditious discharge, trainee discharge during entry level performance and conduct and failure to participate; and
4. Separated for other reasons--conscientious objector, dropped for imprisonment, desertion, and parenthood.

There are other reasons why individuals leave the service that were not included in this study. One reason is expiration of term of service (ETS). Persons who were discharged because of ETS were not considered attrition cases, since they are considered to have completed their enlistment contract.

Another reason for "leaving" the military is death. Persons who died in the military were not recorded as attrition cases in this study. In addition, individuals who are discharged from the enlisted ranks to enter an officer program and/or "discharged" for the purpose of changing a term of enlistment (called "immediate reenlistment") were not recorded as attrition cases.





## **IV. RESULTS**

This chapter presents the results of the frequency and cross-tabulation analysis. Attrition rates are examined by race, race-ethnicity, and ethnic groups with selected background information. An individual's aptitude and education level (HQ or non-HQ) are also used to determine trends among persons who leave the military prematurely. Additionally, cross-tabulations are presented that focus on attrition rates by occupational category and ethnicity.

### **A. DESCRIPTIVE SUMMARY OF THE POPULATION**

According to the data provided by DMDC, there were 567,186 male enlistees with non-prior service who joined the Navy from fiscal years 1983 through 1992. Of these recruits, 94.1 percent (533,722) were not married. The average entry age of the recruits was 19.7 years.

The majority of the recruits (85.1 percent) had a high school diploma at the time of entry into the Navy. Five percent did not have a high school diploma or equivalency certificate, while another 5 percent had a GED or an equivalent. The remaining 5 percent of the recruits had either some college education, a bachelor's degree, or postgraduate education.

## B. ATTRITION RATES

### 1. Race Group

As previously noted, the Department of Defense typically uses just three categories of race: whites, blacks, and others. Table 2 examines the attrition rates of male enlistees who joined the Navy from fiscal years 1983 through 1992. The attrition rate for all male personnel during the 10-year period is 30.6 percent. This attrition rate coincides with previous studies showing that first-term attrition in the Navy has remained at a level of about 30 percent.<sup>66</sup> As the table indicates, there were 567,186 male recruits between 1983 and 1992, and over 173,000 leavers. From the table, blacks are seen to have the highest attrition rate (32 percent); and the "other" race group recorded the lowest rate (24.5 percent).

**Table 2.** Number of Navy Male, Enlisted Entrants and Leavers and Attrition Rates by Race, Fiscal Years 1983 through 1992

Race	Number		Attrition Rate <sup>c</sup> (Percent)
	Entrants <sup>a</sup>	Leavers <sup>b</sup>	
White	449,007	137,773	30.7
Black	93,214	29,804	32.0
Other	24,965	6,119	24.5
TOTAL	567,186	173,656	30.6

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

a) All non-prior service enlisted personnel (male only) who entered the Navy during fiscal years 1983 through 1992.

b) Number of entrants who left the Navy prior to completing their obligated term of enlistment within 48 months of their initial enlistment.

c) Attrition rate is the percentage of "entrants" who are "leavers."

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<sup>66</sup> GAO, 2.

## 2. Racial/Ethnic Group

Table 3 shows the attrition rate of Navy male enlistees who joined during fiscal years 1983 through 1992 by the variable called racial/ethnic group.

The racial/ethnic variable includes a combination of six racial and ethnic categories: white, black, Hispanic, North American Indian/Alaskan Native, Asian, and other/unknown. North American Indians/Alaskan Natives recorded the highest attrition rate (37.1 percent) of the six racial/ethnic groups. At the same time, Asians had the lowest attrition rate at 17.3 percent--less than one-half the rate of North American Indians/Alaskan Natives.

**Table 3.** Number of Navy Male, Enlisted Entrants and Leavers and Attrition Rates by Racial/Ethnic (RETH) Group, Fiscal Years 1983 through 1992

RETH	Number		Attrition Rate <sup>c</sup> (Percent)
	Entrants <sup>a</sup>	Leavers <sup>b</sup>	
White	419,727	128,901	30.7
Black	91,582	29,297	32.0
Hispanic	38,715	11,616	30.0
N.American Indian/ Alaskan Native	3,159	1,170	37.1
Asian	11,542	1,996	17.3
Unknown	2,461	676	27.5
<b>TOTAL</b>	<b>567,186</b>	<b>173,656</b>	<b>30.6</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

a) All non-prior service enlisted personnel (male only) who entered the Navy during fiscal years 1983 through 1992.

b) Number of entrants who left the Navy prior to completing their obligated term of enlistment within 48 months of their initial enlistment.

c) Attrition rate is the percentage of "entrants" who are "leavers."

### 3. Ethnic Group

Ethnic Groups are subdivided, according to the data dictionary provided by DMDC, into 20 categories showing an individual's original ethnic background. The following section focuses on attrition rates by ethnic background, using four major groupings: Hispanics, North American Natives, Asians, and Pacific Islanders.

#### *a. Hispanics*

Table 4 shows the attrition rates of Navy male enlistees with Hispanic origins who joined during fiscal years 1983 through 1992. Cubans had the highest attrition rate among the various subcategories of personnel who were of Hispanic origin. The attrition rate for Cubans was 34.9 percent. The lowest attrition rate was recorded for Mexicans, at 25.8 percent. Enlisted personnel with Latin American origins also had an attrition rate (29.2 percent) that was slightly lower than the rate for all male enlisted personnel.

**Table 4.** Number of Navy Male, Enlisted Entrants and Leavers and Attrition Rates by Hispanic Subcategory, Fiscal Years 1983 through 1992

Hispanic Subcategory	Number		Attrition Rate <sup>c</sup> (Percent)
	Entrants <sup>a</sup>	Leavers <sup>b</sup>	
Mexican	14,976	3,866	25.8
Puerto Rican	6,526	2,086	32.0
Cuban	755	263	34.9
Latin American	1,648	480	29.2
Other Hispanic Descent	14,817	4,921	33.2
TOTAL	38,722	11,616	30.0

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

a) All non-prior service enlisted personnel (male only) who entered the Navy during fiscal years 1983 through 1992.

b) Number of entrants who left the Navy prior to completing their obligated term of enlistment within 48 months of their initial enlistment.

c) Attrition rate is the percentage of "entrants" who are "leavers."

**b. North American Natives**

As seen in Table 5, Aleutians had the highest attrition rate among the enlistees who were North American Natives. However, the total population of Aleutians was just 22. The attrition rates for Eskimos (34.7 percent) and North American Indians (37.0 percent) were also relatively high, when compared with the rate for men as a whole (30.6 percent) in the data base.

**Table 5.** Number of Navy Male, Enlisted Entrants and Leavers and Attrition Rates by North American Native Subcategory, Fiscal Years 1983 through 1992

North American Native Subcategory	Number		Attrition Rate <sup>c</sup> (Percent)
	Entrants <sup>a</sup>	Leavers <sup>b</sup>	
Aleutian	22	11	50.0
Eskimo	49	17	34.7
North American Indian	2,564	947	37.0
TOTAL	2,635	975	37.0

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

a) All non-prior service enlisted personnel (male only) who entered the Navy during fiscal years 1983 through 1992.

b) Number of entrants who left the Navy prior to completing their obligated term of enlistment within 48 months of their initial enlistment.

c) Attrition rate is the percentage of "entrants" who are "leavers."

**c. Asians**

Table 6 shows that all Asian subcategories had an attrition rate that was lower than the rate for the male population as a whole. Indeed, Filipinos had an attrition rate of just 13.5 percent--the lowest rate recorded for *any* of the 20 ethnic subcategories (with the exception of Melanesians, who had just 51 persons in the entire population). It should also be noted that the population of Filipinos was relatively large, compared with that of other

ethnic subcategories. In fact, Filipinos accounted for 6,248 entrants--exceeded only by Mexicans (almost 15,000) and Puerto Ricans (6,526). Enlistees of Japanese origin also had a remarkably low attrition rate (18.5 percent), although there were only 476 members of this group among the more than 560,000 male entrants during the 1983-1992 period.

**Table 6.** Number of Navy Male, Enlisted Entrants and Leavers and Attrition Rates by Asian Subcategory, Fiscal Years 1983 through 1992

Asian Subcategory	Number		Attrition Rate <sup>c</sup> (Percent)
	Entrants <sup>a</sup>	Leavers <sup>b</sup>	
Chinese	380	82	21.6
Japanese	476	88	18.5
Korean	535	131	24.5
Indian	166	47	28.3
Filipino	6,248	840	13.5
Vietnamese	741	195	26.3
Other Asian			
Descent	1,088	229	21.0
<b>TOTAL</b>	<b>9,634</b>	<b>1,612</b>	<b>16.7</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

a) All non-prior service enlisted personnel (male only) who entered the Navy during fiscal years 1983 through 1992.

b) Number of entrants who left the Navy prior to completing their obligated term of enlistment within 48 months of their initial enlistment.

c) Attrition rate is the percentage of "entrants" who are "leavers."

#### *d. Pacific Islanders*

As seen in Table 7, Melanesians had the lowest attrition rate among the various subcategories of Pacific Islanders; but, again, there were just 51 Melanesians in the entire data base. Polynesians had the highest attrition rate among Pacific Islanders at 25.8 percent. As the table shows, the Pacific Islander subcategory (as with the Asian subcategory) has attrition rates that are below that of the male population as a whole.

**Table 7.** Number of Navy Male, Enlisted Entrants and Leavers and Attrition Rates by Pacific Islander Subcategory, Fiscal Years 1983 through 1992

Pacific Islander Subcategory	Number		Attrition Rate <sup>c</sup> (Percent)
	Entrants <sup>a</sup>	Leavers <sup>b</sup>	
Melanesian	51	5	9.8
Micronesian	191	36	18.9
Polynesian	411	106	25.8
Other Pacific Islander Descent	144	36	25.0
<b>TOTAL</b>	<b>797</b>	<b>183</b>	<b>23.0</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

a) All non-prior service enlisted personnel (male only) who entered the Navy during fiscal years 1983 through 1992.

b) Number of entrants who left the Navy prior to completing their obligated term of enlistment within 48 months of their initial enlistment.

c) Attrition rate is the percentage of "entrants" who are "leavers."

### C. ATTRITION RATES BY AFQT CATEGORY

Armed Forces Qualification Test (AFQT) categories are based upon the score an individual receives during the enlistment application process. The AFQT is a composite of mathematical and verbal subtests from the Armed Services Vocational Aptitude Battery (ASVAB). AFQT scores are used by the Military Services as a indicator of a prospective recruit's trainability. AFQT categories and their corresponding score ranges are as follows:

<u>AFQT Category</u>	<u>Score Range</u>
I	93-99
II	65-92
IIIA	50-64
IIIB	31-49
IV	10-30
V	1-9

The scores shown above are percentile scores, based on a norming procedure for the general population of youth. Individuals who score below 10 (category V) are not allowed to enlist in the military, and thus do not appear in the data base.

### 1. Race Group

As Table 8 shows, attrition rates tend to vary for each of the different racial groups. For whites, the highest attrition rate occurred in category IV, at 37.4 percent. On the other hand, blacks and "others" recorded the highest attrition rate within their racial group in category IIIA, at 33.3 percent and 27.3 percent, respectively. It is interesting to note that the "other" racial group's attrition rates across each of the AFQT categories are by far the lowest overall.

Both whites and blacks record their lowest attrition rate in category I. At the same time, the Other group records its lowest rate (22.9 percent) in category IIIB.

**Table 8.** Attrition Rates of Male Enlisted Personnel who entered the Navy in Fiscal Years 1983 through 1992, by Race and AFQT Category

Race	AFQT Category					ALL*
	I	II	IIIA	IIIB	IV	
White	23.1	27.9	34.0	33.9	37.4	30.7
Black	28.3	30.4	33.3	31.7	32.9	32.0
Other	23.2	24.2	27.3	22.9	25.4	24.5
TOTAL	23.2	27.9	33.6	32.1	34.7	30.6

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

\* Indicates total attrition rate for each racial group.



## 2. Racial/Ethnic Group

Table 9 shows attrition rates by AFQT category according to racial/ethnic group. As seen here, Asians have the lowest attrition rates across all AFQT categories. In addition, with the exception of Asians, the prevailing trend is the higher the AFQT score (based on categories), the lower the attrition rate. It is interesting to note that Asians record their lowest attrition rate in category IV (16.4 percent), followed closely by category IIIB (16.8 percent). North American Indians/Alaskan Natives have the highest attrition rates among the racial/ethnic groups for all AFQT categories. Most notably, the attrition rate for North American Indians/Alaskan Native in category IIIA tops out at greater than 40 percent.

**Table 9.** Attrition Rates of Male Enlisted Personnel who entered the Navy in Fiscal Years 1983 through 1992, by Racial/Ethnic (RETH) Group and AFQT Category

RETH	AFQT Category					
	I	II	IIIA	IIIB	IV	ALL*
White	23.0	27.8	34.0	33.4	38.1	30.7
Black	28.0	30.5	33.3	31.7	32.8	32.0
Hispanic	26.9	29.2	33.2	27.6	32.7	30.0
N.American Indian/ Alaskan Native	29.1	35.3	40.7	36.6	38.9	37.1
Asian	16.9	18.3	17.9	16.8	16.4	17.3
Unknown	21.7	24.0	30.6	18.2	29.5	27.5
TOTAL	23.2	27.9	33.6	32.1	34.7	30.6

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

\* Indicates total attrition rate for each racial/ethnic group.

## 3. Ethnic Group

### a. Hispanics

As seen in Table 10, there is some variation in attrition rates by Hispanic

subcategory across AFQT categories. Attrition rates are generally lowest for enlistees in Category I--with the notable exception of Cubans, who recorded their highest rate (42.3 percent) at this level. It is also interesting to note that attrition rates tend to be higher for enlistees who scored in category IIIA than for those who scored in category IIIB. There is only one exception to this trend--enlistees of Other Hispanic descent, who actually recorded the lowest attrition rate for this group in AFQT category IIIA (27.4 percent).

Cubans tend to have the highest attrition rates, regardless of AFQT category. Conversely, Mexicans display the lowest attrition rates for AFQT categories II, IIIB, and IV.

**Table 10.** Attrition Rates of Male Enlisted Personnel who entered the Navy in Fiscal Years 1983 through 1992, by Hispanic Subcategory and AFQT Category

Hispanic Subcategory	AFQT Category					ALL*
	I	II	IIIA	IIIB	IV	
Mexican	24.7	24.8	28.0	24.4	28.7	25.8
Puerto Rican	20.0	31.2	32.2	30.6	35.7	32.0
Cuban	42.7	32.3	40.7	31.5	37.5	34.4
Latin American	22.9	26.6	34.2	27.5	31.7	29.2
Other Hispanic						
Descent	28.9	31.9	27.4	30.3	35.1	33.2
TOTAL	26.9	29.1	33.2	27.6	32.7	30.0

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

\* Indicates total attrition rate for each group in the Hispanic subcategory.

#### ***b. North American Natives***

Table 11 shows that Aleutians, overall, record the highest attrition rate, with the exception of category I, where the rate is zero. At the same time, Eskimos generally show the lowest rates across all AFQT categories. The exception to this is in category IV,

where Eskimos record the highest attrition rate (75.0 percent).

It should be noted again that the numbers of recruits in the various North American Native subcategories are relatively low. For example, there was a total of just 22 Aleutians who entered the Navy over the 1983-1992 period.

**Table 11.** Attrition Rates of Male Enlisted Personnel who entered the Navy in Fiscal Year 1983 through 1992, by North American Native Subcategory and AFQT Category

North American Native Subcategory	AFQT Category					ALL*
	I	II	IIIA	IIIB	IV	
Aleutian	0	66.7	60.0	55.6	20.0	50.0
Eskimo	0	15.8	30.0	41.7	75.0	34.7
North American Indian	28.4	34.9	41.2	37.0	36.7	37.0
TOTAL	28.4	34.6	41.3	37.3	37.6	37.0

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

\* Indicates total attrition rate for each group in the North American Native subcategory.

*c. Asians*

Table 12 shows the attrition rates of Asians who joined the Navy in fiscal years 1983 through 1992. The general expectation is that rates of attrition will tend to rise as AFQT scores decline. This does not occur for some groups. Most notably, the attrition rates for Filipinos actually *decline* as AFQT scores (by category) decline.

Attrition rates are also higher for Koreans in categories I and II than they are for this group in categories IIIA and IIIB. Four of the seven groups shown here recorded their

highest attrition rate in category IV. Yet, the Japanese group actually recorded its lowest rate (13.0 percent) in category IV. At the same time, just three groups (Chinese, Indians, and Other Asian Descent) recorded their lowest attrition rate in either category I or category II.

**Table 12.** Attrition Rates of Male Enlisted Personnel who entered the Navy in Fiscal Year 1983 through 1992, by Asian Subcategory and AFQT Category

Asian Subcategory	AFQT Category					ALL*
	I	II	IIIA	IIIB	IV	
Chinese	16.7	21.0	22.1	18.2	41.4	21.6
Japanese	15.4	17.8	18.8	22.2	13.0	18.5
Korean	25.6	25.3	22.6	21.3	39.3	24.5
Indian	16.7	22.0	47.1	27.8	18.8	28.3
Filipino	17.0	15.0	13.8	13.1	12.0	13.5
Vietnamese	26.7	23.8	23.5	26.5	33.6	26.3
Other Asian Descent	10.2	21.9	20.1	22.0	23.1	21.1
<b>TOTAL</b>	<b>17.0</b>	<b>18.5</b>	<b>17.1</b>	<b>15.9</b>	<b>15.3</b>	<b>17.0</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

\* Indicates total attrition rate for each group in the Asian subcategory.

#### *d. Pacific Islanders*

Table 13 shows attrition rates for Pacific Islanders who joined the Navy in fiscal years 1983 through 1992. As with Eskimos and Aleutians, Melanesians and Micronesians record an attrition rate of zero in category I. In addition, the table also shows that Melanesians, in general, record the most "zero/non reported" attrition rates (categories II and IV). Once again, however, it should be noted that a total of just 51 Melanesians enlisted in the Navy over the 1983-1992 period.

**Table 13.** Attrition Rates of Male Enlisted Personnel who entered the Navy in Fiscal Year 1983 through 1992, by Pacific Islander Subcategory and AFQT Category

Pacific Islander Subcategory	AFQT Category					ALL*
	I	II	IIIA	IIIB	IV	
Melanesian	0	0	50.0	15.4	0	9.8
Micronesian	0	6.3	11.5	31.2	16.7	18.9
Polynesian	16.7	20.3	34.4	26.0	24.0	25.8
Other Pacific Islander Descent	25.0	18.4	23.1	27.4	35.7	25.0
<b>TOTAL</b>	<b>18.2</b>	<b>17.9</b>	<b>25.6</b>	<b>25.7</b>	<b>20.7</b>	<b>23.0</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

\* Indicates total attrition rate for each group in the Pacific Islander subcategory.

#### **D. ATTRITION RATES BY HIGH QUALITY INDICATORS**

This section examines the attrition rates of ethnic groups by indicators of quality at the time of their enlistment. A “high quality” recruit is a person who scored in the upper 50<sup>th</sup> percentile on the AFQT and has a high school diploma or education beyond high school. This measure of “quality”—a combination of enlistment test scores and education level—is often used by the Military Services to measure recruiting success during a designated period.

Previous research has shown that the percentage distribution among high quality recruits has remained constant (at approximately 50 percent) for the Navy during the 1980s.<sup>67</sup> That is, approximately one-half the total recruit population in the Navy has historically tended to be “high quality.”

The following sections show attrition rates among high quality recruits and non-high quality recruits by race, racial/ethnic, and ethnic categories.

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<sup>67</sup> Eitelberg, The All-Volunteer Force, 77.

## 1. Race Group

Table 14 shows the attrition rates for male enlistees who entered the Navy during fiscal years 1983 through 1992 by high quality versus non-high quality status. As the table shows, high quality recruits of all races tend to have lower attrition rates than their non-high quality counterparts. It should also be noted that the "other" racial group records the lowest attrition rates, regardless of "quality" status. That is, the attrition rate of 25.3 percent for "others" among non-high quality recruits is lower than the rate for both high quality whites and high quality blacks.

**Table 14.** Attrition Rates of Male Enlisted Personnel who entered the Navy in Fiscal Years 1983 through 1992, by Race and High Quality/Non-High Quality Status

Race	High Quality (HQ)	Non-High Quality (NHQ)	ALL*
White	27.5	36.6	30.7
Black	30.3	32.7	32.0
Other	23.5	25.3	24.5
TOTAL	27.6	34.9	30.6

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

\* Indicates total attrition rate for each racial group.

## 2. Racial/Ethnic Group

As seen in Table 15, Asians record the lowest attrition rates of all racial/ethnic groups among both high quality recruits (17.2 percent) and non-high quality recruits (17.4 percent). Similar to the results in Table 14, non-high quality whites have a relatively high attrition rate (36.6 percent), exceeded only by the attrition rate for non-high quality North American Indians/Alaskan Natives (39.1 percent). It is also interesting to note in Table 15, that the differences in the attrition rates of high quality and non-high quality recruits tends to be much

lower for racial/ethnic minorities than for whites. For example, the attrition rates for high quality blacks is 30.3 percent--just 2.4 percentage points lower than the rate for blacks who are non-high quality.

**Table 15.** Attrition Rates of Male Enlisted Personnel who entered the Navy in Fiscal Years 1983 through 1992, by Racial/Ethnic (RETH) Group and High Quality/Non-High Quality Status

RETH	High Quality (HQ)	Non-High Quality(NHQ)	ALL*
White	27.5	36.6	30.7
Black	30.3	32.7	32.0
Hispanic	28.3	31.8	30.0
N. American Indian/ Alaskan Native	35.1	39.1	37.1
Asian	17.2	17.4	17.3
Unknown	23.8	30.8	27.5
<b>TOTAL</b>	<b>27.6</b>	<b>34.9</b>	<b>30.6</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

\* Indicates total attrition rate for each racial/ethnic group.

### 3. Ethnic Group

#### a. *Hispanics*

Table 16 shows the attrition rates by "high quality" for Hispanic subcategories. The table show that, among the Hispanic subcategories, Mexicans record the lowest attrition rate overall for both high quality (24.3 percent) and non-high quality (27.3 percent) enlisted personnel. These rates are lower than the comparable rates for the entire Hispanic population.

Cubans record the highest attrition rate (33.3 percent) for high-quality recruits. Cubans also have a 36.9 percent attrition rate among non-high quality recruits--again, the highest attrition rate of all Hispanic subcategories among non-high quality personnel.

**Table 16.** Attrition Rates of Male Enlisted Personnel who Entered the Navy in Fiscal Years 1983 through 1992, by Hispanic Subcategory and High Quality and Non-High Quality Status

Hispanic Subcategory	High Quality (HQ)	Non-High Quality (NHQ)	ALL*
Mexican	24.3	27.3	25.8
Puerto Rican	29.4	33.4	32.0
Cuban	33.3	36.9	34.9
Latin American	26.5	32.0	29.2
Other Hispanic			
Descent	31.1	36.4	33.2
<b>TOTAL</b>	<b>28.3</b>	<b>32.0</b>	<b>30.0</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

\* Indicates total attrition rate for each group in the Hispanic subcategory.

**b. North American Natives**

As seen in Table 17, Aleutians record the highest attrition rate (57.1 percent) among high quality recruits who are from the three subcategories of North American Natives. However, as stated earlier, there were only 22 Aleutians in the database. At the same time, Aleutians show a higher attrition rate for high-quality recruits (57.1 percent) than for non-high quality recruits (43.7 percent). This is also true for the other two subcategories, especially apparent among Eskimos. The attrition rate for non-high quality Eskimos is over 40 percentage points higher than for high quality Eskimos who enlisted in the Navy between 1983 and 1992.



**Table 17.** Attrition Rates of Male Enlisted Personnel who Entered the Navy in Fiscal Years 1983 through 1992, by North American Native Subcategory and High Quality and Non-High Quality Status

North American			
Native Subcategory	High Quality (HQ)	Non-High Quality (NHQ)	ALL *
Aleutian	57.1	43.7	50.0
Eskimo	17.0	57.1	34.7
North American			
Indian	35.4	38.7	37.0
<b>TOTAL</b>	<b>35.1</b>	<b>39.1</b>	<b>37.0</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

\* Indicates total attrition rate for each group in the North American Native subcategory.

*c. Asians*

As Table 18 shows, Filipinos have the lowest attrition rate overall among both high quality and non-high quality recruits. However, it is interesting to note that Filipinos show a slightly higher attrition rate for high quality recruits (13.9 percent) than for non-high quality recruits (13.2 percent). Indians also record a higher attrition for high quality recruits (29.4 percent) than for non-high quality recruits (27.0 percent). Personnel of Japanese origin have a noticeably low attrition rate in the high quality grouping--16.1 percent--which is just about 2 percentage points above the rate for Filipinos.

Indians had the highest attrition rate among high quality recruits. On the other hand, Vietnamese recorded the highest attrition rate for non-high quality recruits, at 28.5 percent.

**Table 18.** Attrition Rates of Male Enlisted Personnel who Entered the Navy Between Fiscal Years 1983 through 1992, by Asian Subcategory and High Quality and Non-High Quality Status

Asian Subcategory	High Quality (HQ)	Non-High Quality (NHQ)	ALL*
Chinese	19.7	24.5	21.6
Japanese	16.1	24.1	18.5
Korean	23.8	26.1	24.5
Indian	29.4	27.0	28.3
Filipino	13.9	13.2	13.5
Vietnamese	23.5	28.5	26.3
Other Asian Descent	19.6	22.9	21.0
TOTAL	17.1	16.5	16.7

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

\* Indicates total attrition rate for each group in the Asian subcategory.

#### *d. Pacific Islanders*

As Table 19 shows, Micronesians record the lowest attrition rate for high quality recruits (9.1 percent). This is, by far, the lowest attrition rate across all ethnic subcategories. Non-high quality Melanesians have an attrition rate of 3.1 percent--the lowest rate among the Pacific Islander subcategory as well as for all other 16 ethnic categories as well. However, as previously noted, there are just about 51 recruits in the Melanesian category.

Melanesians, as with Filipinos and Indians (shown previously), have a higher attrition rate among high quality recruits (21.1 percent) than among those who are non-high quality (3.1 percent). The Pacific Islander subcategory, along the Asians, tend to have the lowest attrition rates for both high quality and non-high quality recruits among all ethnic group subcategories.

**Table 19.** Attrition Rates of Male Enlisted Personnel who Entered the Navy in Fiscal Years 1983 through 1992, by Pacific Islander Subcategory and High Quality and Non-High Quality Status

Pacific Islander			
Subcategory	High Quality (HQ)	Non-High Quality (NHQ)	ALL *
Melanesian	21.1	3.1	9.8
Micronesian	9.1	22.8	18.9
Polynesian	23.2	26.9	25.8
Other Pacific			
Islander Descent	20.0	29.1	25.0
<b>TOTAL</b>	<b>19.3</b>	<b>24.8</b>	<b>23.0</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

\* Indicates total attrition rate for each group in the Pacific Islander subcategory.

## E. ATTRITION RATES BY PERFORMANCE STANDARDS

Inter-service Separation Codes (ISCs) are categorized into four major groups that show reasons why recruits are discharged from the military. These reasons are described in Chapter III.

The most prominent group of reasons for separation involve the failure of a recruit to meet the minimum behavior or performance standards of military service. The attrition rates of enlisted personnel are examined for this reason, according to race, racial/ethnic group, and the various ethnic subcategories.

### 1. Race Group

As seen in Table 20, the attrition rate for all male personnel who failed to meet minimum behavior or performance criteria is 21.2 percent. There were over 120,000 male recruits who left the Navy for this general reason. Here, blacks are seen to have the highest attrition rate (24.3 percent); and the "other" group has an attrition rate of 17.4 percent, which is the lowest rate for the three racial groups.

**Table 20.** Attrition Rates of Male Enlisted Personnel who entered the Navy in Fiscal Years 1983 through 1992, by Race and Failure to Meet Minimum Behavior or Performance Criteria

Race	Number		Attrition Rate (Percent)
	Entrants	FTMPC* Leaver	
White	449,007	93,451	20.8
Black	93,214	22,685	24.3
Other	24,965	4,354	17.4
<b>TOTAL</b>	<b>567,186</b>	<b>120,490</b>	<b>21.2</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

\* Failure to Meet Minimum Behavior or Performance Criteria.

## 2. Racial/Ethnic Group

Table 21 shows the attrition rates of Navy male enlistees who joined during the 1983 through 1992 period by racial/ethnic group. North American Indians/Alaskan Natives have the highest attrition rate (27.9 percent) of the six racial/ethnic groups. Asians, again, have the lowest attrition rate based on failure to meet minimum behavior or performance criteria (11.1 percent).

**Table 21.** Attrition Rates of Male Enlisted Personnel who entered the Navy in Fiscal Years 1983 through 1992, by Racial/Ethnic (RETH) Group and Failure to Meet Minimum Behavior or Performance Criteria.

RETH Group	Number		Attrition Rate (Percent)
	Entrants	FTMPC* Leaver	
White	419,727	87,271	20.7
Black	91,582	22,307	24.3
Hispanic	38,715	8,248	21.3
N.American Indian/ Alaskan Native	3,159	882	27.9
Asian	11,542	1,279	11.1
Unknown	2,461	503	20.4
<b>TOTAL</b>	<b>567,186</b>	<b>120,490</b>	<b>21.2</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

\* Failure to Meet Minimum Behavior or Performance Criteria.

### 3. Ethnic Group

The section looks at the attrition rates of male enlistees who failed to meet minimum behavior or performance standards for the 20 ethnic groups. As in previous discussions, these groups are examined within four major subcategories: Hispanics, North American Natives, Asians, and Pacific Islanders.

#### *a. Hispanics*

As seen in Table 22, Cubans have the highest attrition rate based on failure to meet minimum behavior or performance criteria (24.4 percent), while Mexicans have the lowest rate (18.7 percent). The total attrition rate for the Hispanic subcategory (21.3 percent) is slightly higher than the attrition rate for all male enlisted personnel--21.2 percent--based on the failure to meet minimum behavior or performance criteria.

**Table 22.** Attrition Rates of Male Enlisted Personnel who Entered the Navy in Fiscal Years 1983 through 1992, by Hispanic Subcategory and Failure to Meet Minimum Behavior or Performance Criteria

Hispanic Subcategory	Number		Attrition Rate (Percent)
	Entrants	FTMPC* Leaver	
Mexican	14,976	2,807	18.7
Puerto Rican	6,526	1,397	21.4
Cuban	755	184	24.4
Latin American	1,648	333	20.2
Other Hispanic			
Descent	14,817	3,527	23.8
<b>TOTAL</b>	<b>38,722</b>	<b>8,248</b>	<b>21.3</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

\* Failure to Meet Minimum Behavior or Performance Criteria.

**b. North American Natives**

Table 23 shows that Aleutians have the highest attrition rate (40.9 percent) among the North American Indian subcategory. Eskimos and North American Indians record relatively higher attrition rates (26.5 percent and 27.8 percent, respectively) than the total male population (21.2 percent). At the same time, the total North American Native subcategory (27.9 percent) is higher than that of the total male population.

**Table 23.** Attrition Rates of Male Enlisted Personnel who Entered the Navy in Fiscal Years 1983 through 1992, by North American Native Subcategory and Failure to Meet Minimum Behavior or Performance Criteria

North American Native Subcategory	Number		Attrition Rate (Percent)
	Entrants	FTMPC* Leaver	
Aleutian	22	9	40.9
Eskimo	49	13	26.5
North American			
Indian	2,564	714	27.8
<b>TOTAL</b>	<b>2,635</b>	<b>736</b>	<b>27.9</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC)

\* Failure to Meet Minimum Behavior or Performance Criteria.

*c. Asians*

Table 24 shows that the total Asian subcategory attrition rate (10.7 percent) is approximately one-half the attrition rate for the male population as a whole (21.2 percent). Indeed, as the table shows, Filipinos represent the largest Asian subcategory and also have the lowest attrition rate (8.4 percent) among Asians. Overall, the attrition rates for the Asians are among the lowest of the four ethnic groupings used here.

**Table 24.** Attrition Rates of Male Enlisted Personnel who Entered the Navy in Fiscal Years 1983 through 1992, by Asian Subcategory and Failure to Meet Minimum Behavior and Performance Criteria

Asian Subcategory	Number		Attrition Rate (Percent)
	Entrants	FTMPC* Leaver	
Chinese	380	55	14.5
Japanese	476	69	14.5
Korean	535	87	16.3
Indian	166	30	18.1
Filipino	6,248	526	8.4
Vietnamese	748	105	14.0
Other Asian Descent	1,088	153	14.0
<b>TOTAL</b>	<b>9,634</b>	<b>1,025</b>	<b>10.7</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC)

\* Failure to Meet Minimum Behavior or Performance Criteria.

*d. Pacific Islanders*

As seen in Table 25, the attrition rate for Melanesians (8.0 percent) is the lowest among all ethnic subcategories. As with Asians, the Pacific Islander subcategory (10.7 percent) is also among the lowest when compared with all other ethnic groups.

**Table 25.** Attrition Rates of Male Enlisted Personnel who Entered the Navy in Fiscal Years 1983 through 1992, by Pacific Islander Subcategory and Failure to Meet Minimum Behavior or Performance Criteria

Pacific Islander Subcategory	Number		Attrition Rate (Percent)
	Entrants	FTMPC* Leaver	
Melanesian	51	4	8.0
Micronesian	191	30	15.7
Polynesian	411	80	19.5
Other Pacific Islander Descent	144	23	16.0
<b>TOTAL</b>	<b>797</b>	<b>137</b>	<b>17.1</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC)

\* Failure to Meet Minimum Behavior or Performance Criteria.

## F. ATTRITION RATES BY PRIMARY OCCUPATION

### 1. Primary Occupation Distribution

Table 26 shows the frequency distribution of male enlisted personnel according to the ten occupational groupings used by the Department of Defense. Examples of Navy occupations within these ten groupings are as follows:

1. Seamanship/Gun Crews--boatswain's mate (BM), and gunner's mate (GM);
2. Communications and Intelligence Specialist--operations specialist (OS), intelligence specialist (IS), and radioman (RM);
3. Health Care Specialist--hospitalman (HM) and dentalman (DT);
4. Technical and Allied Specialist--diver and EOD/SEAL candidates;
5. Functional Support and Administration--recruiter, data processing technician (DT), and disbursing clerks (DK);
6. Electronic Equipment Repair--electronics technician (ET), cryptologist (CT), fire control radar technicians (FC), and aviation electronics technician (AT);



7. Electrical/Mechanical Equipment Repair-- electricians mates (EM), engineman (EN), aviation electrician's mate (AE), boiler technician (BT), interior communications electrician (IC), and gas turbine systems technician (GS);
8. Craftsmen--hull maintenance technician (HT), and damage controlman (DC);
9. Service and Supply Handlers--ship's serviceman (SH) and mess management specialist (MS);
10. Non Occupational--construction man apprentice (CA), fireman recruit (FR) and fireman apprentice (FA), seaman recruit (SR) and seaman recruits (SA), and airman apprentice (AA).

**Table 26.** Frequency Distribution of Male Enlisted Personnel Who Entered the Navy in Fiscal Years 1983 through 1992, by Primary Occupational Group

Primary Occupation	Frequency	Percentage
Seamanship/Gun Crews	60,198	10.6
Communications & Intelligence	46,134	8.1
Health Care Specialist	20,295	3.6
Technical & Allied Specialist	5,561	1.0
Functional Support & Admin	44,110	7.8
Electronic Equipment Repair	78,717	13.9
Elect/Mech Equipment Repair	147,274	25.9
Craftsmen	26,137	4.6
Service & Supply Handlers	17,738	3.1
Non-Occupational	121,022	21.3
<b>TOTAL</b>	<b>567,186</b>	<b>100.0*</b>

Source: Derived from Data provided by Defense Manpower Data Center (DMDC).

\* Percentages may not add to 100 due to rounding.

As seen in table 26, the majority of jobs performed by recruits were in the Electrical/Mechanical Equipment Repair group (over 140,000 personnel), along with the group called "non-occupational" (over 121,000 personnel).

## **2. Race Group**

Table 27 shows the attrition rates of male enlisted personnel by primary occupation according to race. As the table shows, the highest attrition rates across all racial groups were recorded in the non-occupational area. Sailors with occupations in this area are termed “gendets” (for general detailed jobs) because they do not have a specific occupation. At the same time, the non-occupational area includes recruits who were discharged during training, and never received an occupational qualification in the official records. A considerable amount of personnel attrition occurs during the first six months of active-duty.

Surprisingly, the lowest attrition rates across each of the racial groups were found among the Technical and Allied Specialists. This is a normally a very physically challenging area where one might expect higher attrition rates. The “Other” race group tends to have the lowest attrition rates across the various occupational areas. The exceptions here are in the Technical and Allied Specialist and Electronic Equipment Repair, where whites record the lowest attrition rates (8.1 percent and 17.2 percent, respectively). In addition, persons in the “Other” racial group have an attrition rate in the Service and Supply Handler area (13.5 percent) that is one-half the rate for whites in the same occupational area.

**Table 27. Attrition Rates of Navy Male Enlisted who Entered the Navy in Fiscal Year 1983 through 1992, by Race and Primary Occupation**

Race	Navy Primary Occupation Codes *									
	SG	CN	HC	TC	AD	EE	EQ	CM	SS	NO
White	18.7	17.0	15.1	8.1	16.3	17.2	15.1	18.7	27.2	87.7
Black	17.2	16.4	14.4	11.4	13.8	22.4	14.8	15.1	24.5	82.6
Other	15.2	14.3	9.2	8.8	9.2	17.3	10.7	13.5	13.5	81.4

Source: Data derived from the Defense Manpower Data Center (DMDC).

\* Abbreviations are as follows: Seaman/Gun Crews (SG); Communications Specialist (CN); Health Care Specialist (HC); Technical and Allied Specialist (TC); Functional Support and Administration (AD); Electronic Equipment Repair (EE); Electrical/Mechanical Equipment Repair (EQ); Craftsmen (CM); Service and Supply Handlers (SS); Non-Occupational (NO).

### **3. Racial/Ethnic Group**

Table 28 shows the attrition rates of male enlisted personnel by primary occupation and racial/ethnic group. As in Table 27, the highest attrition rates are found in the non-occupational area. Table 28 also shows that Asians have the lowest attrition rates among the racial/ethnic groups. The difference between the attrition rates for Asians and whites is especially apparent in the Service and Supply Handler category, where the rate for Asians (7.5 percent) is about a quarter of the rate for whites (27.6 percent). Similar differences between Asians and other racial/ethnic groups are found in Support and Administration and in the Technical and Allied Specialists areas, where Asians have attrition rates of 5.3 percent and 3.8 percent, respectively.

Conversely, North American Indians/Alaskan Natives tend to have the highest attrition rates across occupations. The exception to this is in the non-occupational area, where whites have a slightly higher attrition rate (87.9 percent) than North American Indians/Alaskan Natives (84.5 percent).

**Table 28.** Attrition Rates of Navy Male Enlisted who Entered the Navy in Fiscal Year 1983 through 1992, by Racial/Ethnic (RETH) Group and Primary Occupation

RETH	Navy Primary Occupation Codes *										
	SG	CN	HC	TC	AD	EE	EQ	CM	SS	NO	ALL
White	18.7	17.0	15.3	7.8	16.5	17.1	15.2	18.7	27.6	87.9	30.7
Black	17.0	16.4	14.5	11.4	13.8	22.4	14.8	15.1	24.5	82.5	32.0
Hispanic	18.3	17.4	12.8	12.2	14.0	18.9	13.6	17.6	22.5	84.5	30.0
North American Indian/Alaskan	19.8	24.0	14.3	20.8	21.3	27.4	19.2	24.7	32.3	84.5	37.1
Asian	16.7	10.4	6.8	3.8	5.3	14.6	7.4	6.2	7.5	81.1	17.3
Unknown	12.4	11.7	10.6	5.2	10.5	14.5	12.0	21.4	18.0	79.3	27.5

Source: Data derived from the Defense Manpower Data Center (DMDC).

\* Abbreviations are as follows: Seaman/Gun Crews (SG); Communications Specialist (CN); Health Care Specialist (HC); Technical and Allied Specialist (TC); Functional Support and Administration (AD); Electronic Equipment Repair (EE); Electrical/Mechanical Equipment Repair (EQ); Craftsmen (CM); Service and Supply Handlers (SS); Non-Occupational (NO).

#### **4. Ethnic Group**

Table 29 shows attrition rates for each of the ethnic groups according to their occupational area. As seen here, there is substantial variation in the attrition rates of ethnic groups by the ten occupational categories. For example, Hispanic subcategories have rates as low as 7.3 percent or 9.8 percent (for Puerto Ricans in the Technical and Allied Specialist and Health Care areas, respectively). On the other hand, Mexicans, who generally have the lowest attrition rates among Hispanic subgroups, record an attrition rate of 21.1 percent in the Service and Supply Handler area.

Several ethnic groups show zero attrition in certain occupational areas. This is due to the small number of persons in these groups, as they are subdivided among the ten occupational areas.

It is difficult to identify any clear pattern of attrition in Table 29. The expectation is that occupational areas for which assignment criteria are most selective--and in which training is most rigorous--would tend to have the lowest attrition rates. However, this is not always true. Filipinos, for example, show their highest attrition rate (other than in the non-occupational area) in Electronic Equipment Repair (14.8 percent)--one of the most selective occupational areas in the Navy. At the same time, Filipinos have a relatively low rate in the Service and Supply Handler area (6.0 percent), typically one of the less selective occupational groupings.

Further statistical analysis may help to clarify the relationships between ethnic groups and occupational areas with respect to attrition behavior. Certainly, the data in Table 29 raise many more research questions than answers.

**Table 29.** Attrition Rates of Navy Male Enlisted who Entered the Navy in Fiscal Year 1983 through 1992, by Ethnic Group and Primary Occupation

Ethnic Group	Navy Primary Occupation Codes *										
	SG	CN	HC	TC	AD	EE	EQ	CM	SS	NO	ALL
<b><u>Hispanics</u></b>											
Mexican	14.1	16.5	11.0	9.9	12.4	15.2	12.0	15.2	21.1	81.8	25.8
Puerto Rican	18.8	15.9	9.8	7.3	12.3	15.1	11.4	13.9	20.7	85.1	32.0
Cuban	21.7	26.3	16.9	0	19.2	21.6	16.0	17.4	9.5	83.8	34.9
Latin American	16.3	14.9	13.0	21.4	14.7	18.2	13.0	13.2	14.3	83.1	29.2
Other Hispanic Descent	22.6	19.1	16.1	15.6	16.5	23.0	16.1	21.3	26.6	86.7	33.2
<b><u>North American Natives</u></b>											
Aleutian	0	66.7	0	0	0	100.0	50.0	33.3	0	80.0	50.0
Eskimo	16.7	0	0	0	0	14.3	31.6	0	66.7	100.0	34.7
North American Indian	22.0	22.9	15.4	20.0	22.3	28.3	19.1	25.1	31.6	84.8	37.0
<b><u>Asians</u></b>											
Chinese	25.8	12.5	4.6	25.0	10.0	8.2	7.3	10.0	25.0	78.7	21.6
Japanese	22.5	6.1	5.3	0	7.4	7.1	10.5	7.1	5.9	78.7	18.5
Korean	20.0	14.7	21.1	0	15.4	20.0	15.0	16.7	3.9	79.7	24.5
Indian	0	0	10.0	0	21.4	9.1	11.1	0	0	81.4	28.3
Filipino	13.1	8.2	4.4	0	2.7	14.8	4.8	3.3	6.0	80.7	13.5
Vietnamese	31.2	10.5	18.0	16.7	12.3	26.0	12.5	15.0	11.4	82.9	26.3
Other Asian Descent	23.2	11.3	9.5	0	9.6	14.1	11.4	17.8	8.6	81.5	21.0
<b><u>Pacific Islanders</u></b>											
Melanesian	0	0	0	0	28.6	0	5.9	14.3	0	100.0	9.8
Micronesian	17.4	12.5	75.0	0	0	5.6	9.7	10.0	13.3	94.4	18.9
Polynesian	14.6	19.4	11.8	0	22.2	17.1	11.7	4.4	21.4	77.0	25.8
Other Pacific Islander Descent	20.0	16.7	0	0	0	17.4	11.6	33.3	28.6	82.6	25.0

Source: Data derived from the Defense Manpower Data Center (DMDC).

\* Abbreviations are as follows: Seaman/Gun Crews (SG); Communications Specialist (CN); Health Care Specialist (HC); Technical and Allied Specialist (TC); Functional Support and Administration (AD); Electronic Equipment Repair (EE); Electrical/Mechanical Equipment Repair (EQ); Craftsmen (CM); Service and Supply Handlers (SS); Non-Occupational (NO).





## **V. CONCLUSIONS AND RECOMMENDATIONS**

The purpose of this thesis was to calculate and explore attrition rates by race, racial/ethnic group, and ethnic group with respect to selected background variables; to identify trends from the attrition rates; and, consequently, to gain a better understanding of first-term enlisted attrition among these population subgroups in the Navy.

The results of the study are based on cross tabulations and frequency analysis using a cohort file (male entrants to the Navy during 1983 through 1992) that was specially created and provided for the study by DMDC in Monterey, California. A summary of conclusions and recommendations based on the study are presented below.

### **A. CONCLUSIONS**

#### **1. Navy Attrition**

The attrition rates for the entire male population have remained at approximately 30 percent during the study period. This is the typical rate of attrition for male recruits in the Navy during the years of the All-Volunteer Force.

Asians tend to record the lowest attrition rate (17.3 percent) among racial/ethnic groups. The attrition rate for Asians is almost one-half the rate for the male population as a whole. Filipinos record the lowest attrition rate (13.5 percent) among Asian groups and, arguably, among all other ethnic groups. The exception here is found for Melanesians (in the Pacific Islander subcategory), who record a 9.8 percent attrition rate. However, the entire population of Melanesians numbered just 51. This compares with 6,248 Filipinos who entered the Navy during the 1983 through 1992 period.

North American Indians/Alaskan Natives record the highest attrition rate at 37.1 percent. Although the Aleutians record a 50.0 percent attrition rate, the total number of Aleutians in the sample population was just 22.

Among the Hispanic subcategory, Cubans record the highest attrition rate (34.9 percent) and Mexicans have the lowest attrition rate (25.8 percent).

## **2. AFQT Scores**

Filipinos tend to record the lowest attrition rates across AFQT categories. Most notable is the fact that, as Filipino attrition rates decline, the AFQT scores of Filipino personnel (by category) tend to decline as well.

Attrition rates increase from category IIIB to category IIIA for certain racial/ethnic groups--such as whites, blacks, and Filipinos. Cubans and Filipinos record the highest attrition rates for their ethnic group in AFQT category I--where one would expect lower attrition rates--given that this category has the highest AFQT scores.

## **3. Educational Level/Aptitude**

The "Other" racial group, has the lowest attrition rate (23.5 percent) among high quality recruits across the various races. At the same time, Asians have the lowest attrition rate (17.2 percent) among high quality recruits across the six racial/ethnic groups.

Most notable in the data on ethnic groups are Filipinos, Indians, and Melanesians, which have higher attrition rates among high quality recruits than among those who are non-high quality. This trend runs counter to expectations, assuming that the higher one's combination of aptitude and education, the lower the likelihood of attrition.

#### **4. Failure to Meet Performance Criteria**

The overall attrition rate for failure to meet minimum behavior or performance criteria is 21.2 percent for the total population of male enlisted personnel in the study.

Blacks and North American Indians tend to have higher attrition rates (24.3 percent and 27.9 percent, respectively) than do other racial or ethnic groups for failing to meet minimum behavior or performance criteria. Mexicans record the lowest attrition rate (18.7 percent) in the category among the entire Hispanic population.

Most notable in this area are Filipinos. Filipinos record an 8.4 percent attrition rate for failing to meet minimum behavior or performance criteria. On the other hand, Aleutians record a 40.9 percent attrition rate. As previously noted, however, the population for Aleutians in the data base totaled just 22.

#### **5. Primary Occupation**

The non-occupational area has, by far, the highest attrition rates across all race, racial/ethnic, and ethnic groups. This is expected, given that this occupational area includes persons who left the Navy before occupational training, those who failed occupational training, and those who never received such training.

Asians show the lowest attrition rates across all primary occupations. Filipinos tend to have the lowest attrition rates by occupational area among all ethnic groups. Mexicans tend to have the lowest attrition rates among the Hispanic population; however, this particular trend does not hold true for all occupational areas.

#### **6. Conclusions**

Education (high school completion) is perhaps the best single predictor of whether

an individual will complete his or her first term of enlistment in the military. However, each race, racial/ethnic, and ethnic group record different attrition rates based on high quality (education plus aptitude) indicators. Thus, high quality indicators may not be equally effective on a predictor of first-term attrition for all ethnic groups.

AFQT categories have also proven useful in predicting first-term attrition. However, this study shows that certain ethnic groups have higher attrition rates as their AFQT scores (based on category) decline.

Failure to meet minimum behavior or performance criteria is the major reason why recruits leave the Navy prematurely. This category indicates the “adaptability” of recruits, as they adjust to life in the Navy. The data in this study show that an individual’s behavior/performance has a greater effect on attrition than do medical, hardship/dependency, or other reasons.

The primary occupational area of a recruit also lends some insight as to why a person may fail to complete a first-term of enlistment. This study shows that the attrition rates of enlisted personnel in different ethnic groups may vary considerably from one occupational area to another. The reasons for such variation are unclear from the data presented here.

The results of this study are exploratory in nature, but they confirm that most male minorities tend to have lower attrition rates than do their white counterparts. The relationship holds up when attrition rates are examined by common demographic variables that have been shown to correlate with attrition in previous studies.

## B. RECOMMENDATIONS

Although military attrition studies have been conducted by many researchers over the past several decades, very little attention has been given to differences in attrition between racial or ethnic categories of personnel. Many studies look at racial groups (whites, blacks, and others) as one of many demographic descriptions of personnel. Nevertheless, few, if any, analyses have attempted to explore racial or ethnic differences in attrition rates beyond a very superficial level. Further research concerning these differences may be useful in explaining why recruits, generally, fail or succeed to complete their first-term of military service. This information, in turn, would assist defense policy makers in developing improved standards for selection and better predictors of a recruit's chances to be an effective member of the armed forces. Possible areas for further research are discussed below.

- *Investigate why Filipinos have such a low attrition rate.* Specifically, one could explore the possible reasons or determine factors that cause persons in this group to adapt so successfully to life in the Navy. Regression analysis could be employed to assess whether certain background variables--such as educational level, aptitude, or marital status--can help to explain why Filipinos tend to stay or leave military service. It is likely that the "success story" of Filipinos in the Navy is based on certain "internal motivating factors," which may only come to light through some form of survey research.
- *Perform regression analysis to capture significant relationships among each of the race, racial/ethnic, and ethnic groups; and identify, for each group, the likely*

*influences of first-term attrition.* Cross-tabulations and frequency analysis are useful tools for exploratory research. More detailed analysis is needed, however, to specify statistical relationships of selected variables to attrition.

- *Examine ethnic groups within the non-occupational area by the point at which recruits tend to leave the military.* This research would help to determine the nature and timing of early attrition for racial or ethnic groups.
- *Conduct further study of attrition among persons who fail to meet minimum behavior or performance criteria, focusing on racial and ethnic subgroups of personnel.* This would involve a more detailed analysis of the precise causes of discharge, as described in the ISCs. The research may also call for the examination of selected personnel files, due to the apparent inaccuracy of ISCs in fully explaining causes of discharges.

In this age of downsizing and budget reduction, the Navy must learn to optimize its return on investment from each recruit. Personnel attrition will never be eliminated, nor should it be. Nevertheless, improved methods of selecting and assigning recruits can help to reduce current rates of attrition--which are historically embedded at 30 percent or greater--and thereby cut the substantial, cumulative expense of replacing young men and women who fail to fulfill their service contract. One possible way of reducing attrition may lie in a better understanding of why many racial or ethnic minorities are able to succeed so comparatively well in the military.

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